



City of Carnation



King County

Stillwater Wildlife Refuge wetland enhancement discharge alternative

Overview

The City of Carnation has determined that replacing on-site septic systems with a wastewater treatment facility is important to address public health concerns and maintain and enhance community livability. The city contracted with King County to design, build and operate the treatment plant, wastewater conveyance pipe and discharge location. A river outfall and wetlands enhancement location are still being considered for discharging the highly treated water.

There is much support by the county, the city, state agencies, environmental groups and others for the wetland discharge alternative because it takes advantage of the high-quality water produced by the treatment plant and uses it for a beneficial purpose. However, it is more expensive (about \$2.5 million more than the river discharge alternative.) The city and the county have agreed to conduct an aggressive six-month effort to find partners and secure funding for the wetlands alternative. If funding assistance is not found for the wetlands alternative, the county will not be able to cover the added cost for the wetlands and will move forward with designing an outfall into the Snoqualmie River at the Carnation Farm Road Bridge.

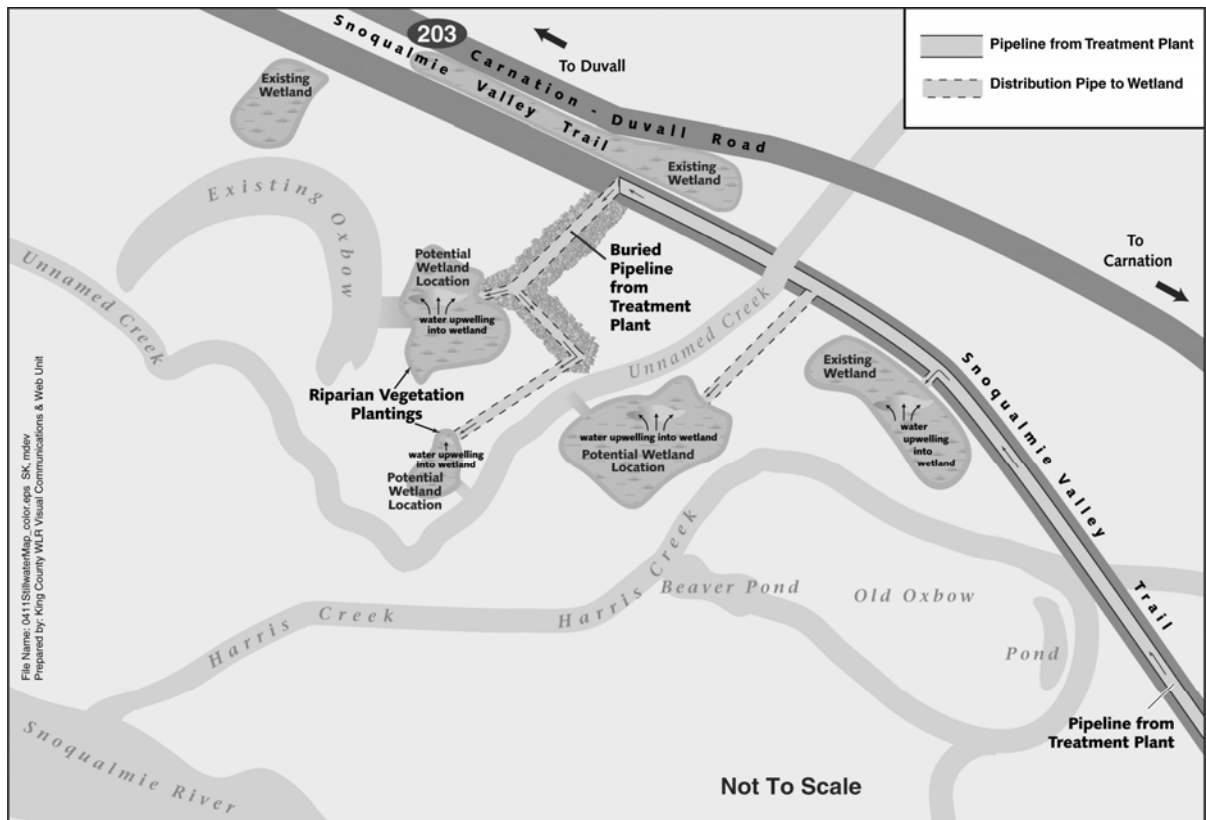
Wetland Enhancement Discharge



How will it work?

The Carnation wastewater treatment facility will produce Class A reclaimed water after treating the community's sewage. This water would be piped to the wetlands of the state Department of Fish and Wildlife's Stillwater Wildlife Area, located approximately two miles north of Carnation. The water would be designed to naturally disperse through the wetlands and eventually make its way to the Snoqualmie River through groundwater and surface water flows. The area is now managed for wildlife habitat. Enhancing a wetland in this area would be consistent with improving habitat for birds, waterfowl and a wide variety of other aquatic life and wildlife species. Please refer to the map on the last page of this fact sheet.

A conceptual drawing on the next page shows the proposed wetland enhancement discharge.



Proposed Stillwater Wildlife Wetland Enhancement Sites

Conceptual Wetland Discharge

What is reclaimed water?

All the treated water from Carnation will meet or exceed the Class A reclaimed water standards of Washington. That standard means the reclaimed water has nearly unrestricted uses, including human contact, but is not approved for human drinking water. Reclaimed water is commonly used for irrigating public parks, sports fields and golf courses and for various industrial processes. Demonstration projects in Washington use it in many ways including landscape irrigation, city street cleaning and dust control, wetlands, groundwater recharge and stream flow augmentation. More information on these demonstration projects is at <http://www.ecy.wa.gov/pubs/0010062.pdf>.

Is this new? Where else is it being done?

Discharge to created or enhanced wetlands takes place successfully in many communities and has created real community benefits. Here are two examples.

- **Arcata Marsh and Wildlife Sanctuary, Arcata, Calif.** -- Arcata has a 2.3-million-gallon-per-day (mgd) wastewater treatment plant with 7.5 acres of treatment wetlands and 31 acres of treatment/enhancement wetlands. The sanctuary has become a popular bird-watching spot and is a valued park in the community. Visit this Web site for more information: http://www.humboldt.edu/~ere_dept/marsh/.

- **Orlando Wetlands, Orlando, Fla** -- Orlando created a 1,640-acre wetlands system using reclaimed water from the Iron Bridge advanced wastewater treatment facility. The wetlands are the centerpiece of a public park and nature preserve featuring hiking, jogging, biking, and nature observation. In 2003, about 18.1 mgd of reclaimed water was used in the wetlands system. Learn more at <http://www.dep.state.fl.us/water/reuse/project.htm>.

What are the benefits of the wetland discharge alternative?

Habitat. Over the past 100 years, more than 80 percent of the wetlands historically located in the Snoqualmie have been removed or altered. This practice has reduced habitat for a variety of fish and wetland-associated wildlife including coho salmon, waterfowl, other migratory birds, amphibians, reptiles and mammals. The wetland complex would provide a variety of habitats. It would be created to maximize the edge-to-area ratio and to create a variety of water depths to provide the greatest benefit to the greatest diversity of species.

Hydrology. While the reclaimed water source would not be the only source of water to the wetland, it would make up a greater percentage of water in the wetland during the drier summer months and likely keep more water in the wetland into early summer. This has the potential to enhance dry season base flows in the streams of Stillwater Wildlife Area.

Is it safe?

The plant will use advanced treatment to meet or exceed reclaimed water standards. The facility will get a National Pollutant Discharge Elimination System permit, which contains strict pollution limits on what can be discharged. The limits are set so the receiving water is not degraded from its current condition and continues to provide current beneficial uses. The treated water will be monitored daily to ensure it always meets high water quality standards.

New information is emerging about the natural and synthetic chemicals people dispose of every day in their sinks and toilets, called endocrine disrupting chemicals. The endocrine system is a complex network of glands and hormones that regulate various life functions such as growth and reproduction. Studies are beginning to show that even low levels of some of these chemicals may affect the endocrine systems of fish and wildlife. At this point, research is being done to identify which of the hundreds of chemicals produced cause endocrine disruption. The next step is to determine at what concentration they are a problem. With that knowledge, the following step will be to regulate the chemicals identified as being of concern. King County is tracking research in this area so we will be prepared to respond to new developments.

Why isn't a final decision being made to use this alternative?

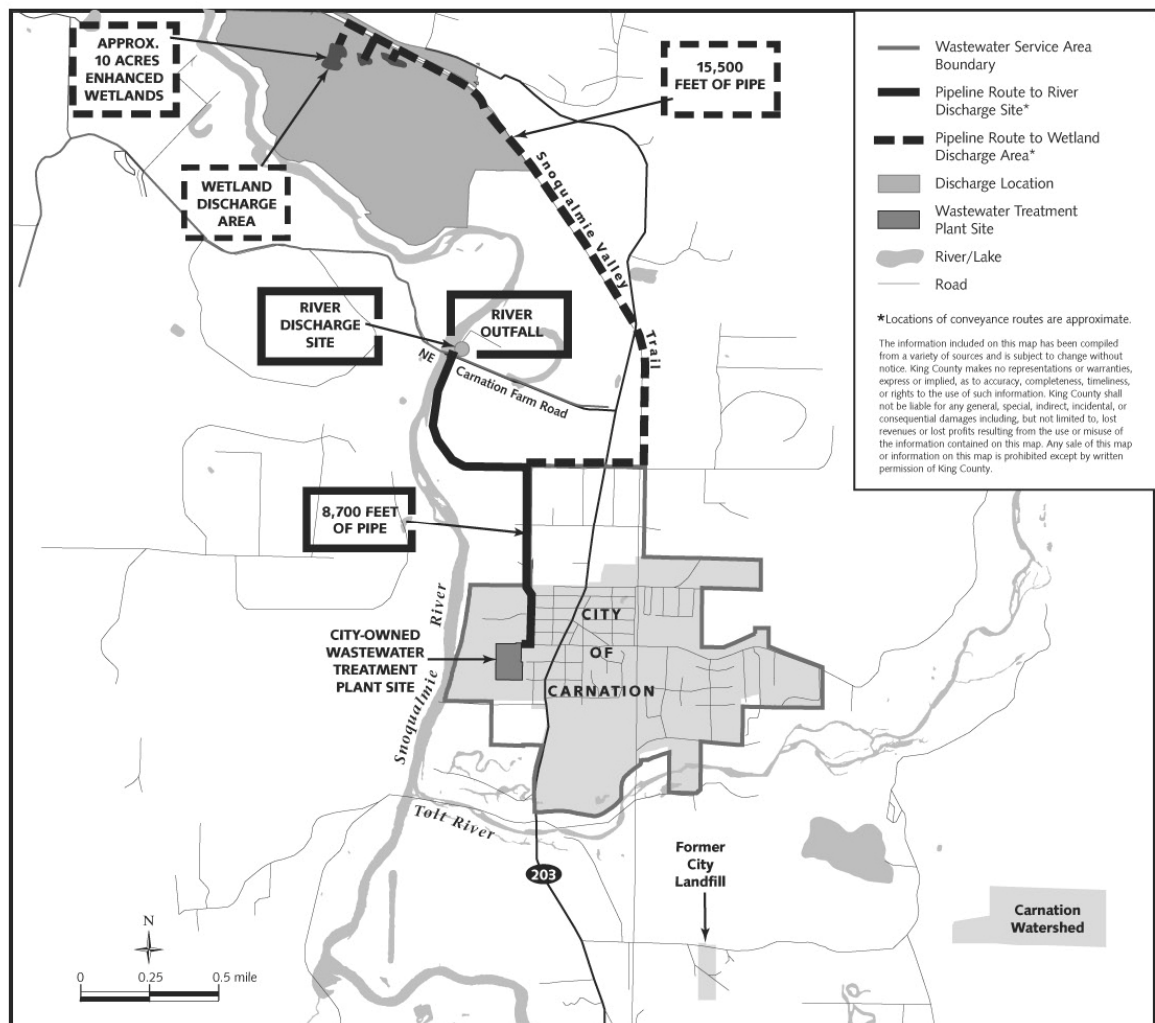
This wetland discharge is the most expensive of the alternatives still being considered for the Carnation treatment plant. In the next six months, the city and county will aggressively pursue partnerships and funding for the wetlands discharge. Because it has benefits and would be the most natural way to use reclaimed water, we are hopeful we can get grant funding. By May 2005, if the city and county are unable to identify satisfactory ways to minimize the cost of this alternative, the river outfall will be recommended for implementation.

Where can I get more information or let you know my opinion?

This is one of four fact sheets, the others cover the project overview, the treatment plant, and the river discharge alternative. For copies of the other fact sheets or other information on the treatment facility, contact the King County Carnation project team by:

- Call the project information line at 206-263-5212 or toll-free at 1-800-325-6165, ext. 35212.
- Send an e-mail message to CarnationWWTP@metrokc.gov.
- Check the Web site at <http://dnr.metrokc.gov/WTd/carnation/>.

For information on the local sewage collection system, contact Bill Brandon, City Manager for the City of Carnation, at 425-333-4192 or check the Web at www.ci.carnation.wa.us.



Carnation Wastewater Treatment Plant Locations

To get this information in alternative formats,
call 206-296-8361 or 711 (TTY)